Capiro, Mirtha

From: Sundar, Bhooma
Sent: Tuesday, May 02, 2017 2:14 PM
To: Capiro, Mirtha
Subject: Rohm and Hass BRA Conclusions
Attachments: Rohm & Hass Fish Ingestion Risk Output.pdf

Mirtha,

Parson submitted the revised Baseline Risk Assessment (BRA) report for Rohm and Hass chemicals, Ohio in October 2010. Based on the conceptual site model, the risk assessment evaluated the risk associated with all the potential exposure pathways for the receptors potentially in contact with all the impacted exposure media. The BRA report assessing human health risk concludes that except for fish ingestion pathway, all other exposure pathways pose no significant health risk to potential receptors. The following passage from Section 8.0 fo the BRA report states that fish ingestion pathway poses unacceptable risk due to arsenic in surface water.

"For the adult recreational fisherman, the hazard index (0.67) was below acceptable levels; however, the carcinogenic risk (1.2×10^{-4}) is above the acceptable levels, primarily due to the fish ingestion pathway. Therefore, exposure via ingestion of fish in the Mill Creek from fishing activities may result in an unacceptable cancer risk under the conditions evaluated for this receptor. The primary chemical of concern is arsenic. Arsenic was detected in only one duplicate sample in surface water; thus, the risk from this compound is likely overestimated based on this low frequency of detection and the utilization of the maximum detected concentration with conservative uptake parameters in the fish tissue modeling and because arsenic was detected at or below background levels in the surface water and sediments of Mill Creek. Thus, further evaluation of the fish ingestion pathway is not warranted at this time."

Since RCRA corrective action is focused on addressing the media that poses unacceptable risk, I evaluated the uncertainty discussion and the risk characterization methodology. My evaluation indicates that Parson, overestimated the carcinogenic risk for adult recreational fisherman. Using the constituents of concern(COC) identified in surface water and sediment (Section 4.3.1.7), exposure parameters (Table 4.14) and fish tissue COC calculations (table 11.3), the carcinogenic risk due to fish consumption is calculated to be 9.4 E-08 instead of 1.2E-04 as reported in the BRA report. The screening criterion for arsenic in fish targeting 1E-06 excess cancer risk is estimated to be 15mg/kg. Thus arsenic at a level of 1.08 mg/kg in fish from surface water contamination, does not pose unacceptable risk to adult recreational fisherman. Please see the attached output for the risk characterization of estimated COCs in fish for the ingestion pathway.

Please request DOW to verify the risk output and submit an addendum for the fish ingestion pathway risk characterization. This would help EPA to accurately present the risk estimates for the exposure pathways and propose cleanup measures where needed.

Bhooma Sundar
Project Manager/Toxicologist
RCRA Corrective Action (LU-16 J)
Land and Chemicals Division
USEPA Region 5
77, W. Jackson Blvd, Chicago, IL 60604
Tel: 312-886-1660